APPENDIX F

PREHISTORIC OVERVIEW
SUNFLOWER ARMY AMMUNITION PLANT

PREHISTORIC OVERVIEW

REGIONAL PREHISTORIC CULTURAL CHRONOLOGY

Relevant prehistoric archeological summaries prepared for northeastern Kansas are presented in Brown (1987), Brown and Brown (1986, 1987), and Brown and Simmons (1984). The information provided here is largely derived from these resources and a variety of previous investigations conducted at northeastern Kansas reservoirs (see Figure I-4). Generally, the prehistoric chronological framework of northeastern Kansas consists of the Paleo-Indian, Archaic, and Ceramic periods (Table F-1).

Paleo-Indian (10,000 B.C.-6000 B.C.)

The earliest, most widely recognized material expressions of human activity in North America are those of the Paleo-Indian tradition, which begins circa 10,000 B.C. and fades sometime around 6000 B.C. Paleo-Indians are characterized as hunter-gatherers, and their presence has been recognized throughout the New World. The surviving elements of Paleo-Indian material culture primarily express hunting and hunting-related activities more than any subsequent traditions. The Paleo-Indian sites and lifeways are, in part, complicated by geological phenomena. Given the fact that this tradition was coterminous with the Pleistocene/Holocene transition, the biota, landscape, and the continent itself were markedly different than they are today.

Generally, the material culture that remains of the Paleo-Indians is their stone tools. The first documented association of Paleo-Indian expressions with extinct mammals in Kansas was in the late 1890s along the Smoky Hill River in Logan County (Rogers and Martin 1984; Williston 1902). While Paleo-Indian assemblages were first nationally recognized from excavations conducted in the arid Southwest during the 1920s, they have since been recovered throughout the Americas. The Paleo-Indian tool kit shows some variation from one site to another (Bamforth 1991), although it is often characterized by distinctive fluted and parallel-flaked projectile points, bifacial knives, drills, gravers, burins, flake cores, scrapers, and flake tools with no formalized shapes (Gramly 1992). Almost irrespective of where Paleo-Indian assemblages are recovered, the tool kit consistently appears to be related to hunting and its associated tasks.

One of the hallmarks of the Paleo-Indian tool kit is a consistent preference for high-quality stone used in the production of stone tools. This consistent selection of the highest quality materials throughout the Paleo-Indian period is accompanied by a degree of craftsmanship that is almost unmatched by later New World

Table F-1

Prehistoric Cultural Chronology for Northeastern Kansas
(after Brown 1987; Brown and Brown 1987)

Cultural Stages	Approximate Dates
Paleo-Indian	
Llano Complex	10,000 B.C. - 9000 B.C.
Folsom Complex	9000 B.C. - 8000 B.C.
Plano Complexes	8000 B.C. - 6000 B.C.
Agate Basin	8500 B.C. - 8000 B.C.
Plainview	9000 B.C. - 8000 B.C.
Firstview	8000 B.C. - 7500 B.C.
Hell Gap	8000 B.C. - 7500 B.C.
Meserve/Dalton	8000 B.C. - 7000 B.C.
Alberta	7500 B.C. - 7000 B.C.
Cody	6800 B.C. - 6400 B.C.
Fredrick	6400 B.C. - 6000 B.C.
Archaic	
Early Plains	6000 B.C. - 5000 B.C.?
Middle Plains	5000 B.C. - 2500 B.C.?
Late Plains	2500 B.C. - A.D. 1?
Ceramic	
Early Ceramic/Plains Woodland	A.D. 1 - 1000
Deer Creek phase	A.D. 1 - 750
Wakarusa phase	A.D. 1 - 1000
Hertha phase	365 - 760
Middle Ceramic/Plains Village	1000 - 1500
Steed-Kisker phase	1000 - 1250
Nebraska phase	1050 - 1425
Pomona Variant	900 - 1430
Clinton phase	960 - 1430
Apple Valley phase	1300 - 1350
May Brook phase	1100 - 1290
Late Ceramic/Protohistoric	1500 - 1800

traditions (Bryan 1965; Callahan 1979; Frison 1976, 1991; Gramly 1992, 1993; Gruhn and Bryan 1977; Knudson 1973; MacDonald 1968; Mehringer 1988; Ritchie 1957; Wormington 1957). The combination of fine stone and superb craftsmanship found throughout the New World raises the question as to whether those elements of their material culture that are no longer archeologically visible (as an accident of preservation) were not equally elaborate in terms of their stylistic and technological sophistication. An example of delicately incised bone at the Agate Basin (Wyoming) and Lindenmeir (Colorado) sites provides a case in point and suggests fine work in clothing manufacture. This craftsmanship may have extended to wood and other perishable media (Frison 1991:51; Frison and Zeimens 1980).

Paleo-Indian manifestations in Kansas include the Llano Complex (10,000 B.C.-9000 B.C.), the Folsom Complex (9000 B.C.-8000 B.C.), and the Plano complexes (8000 B.C.-6000 B.C.) represented by the Agate

Basin Complex (8500 B.C.-8000 B.C.), the Plainview Complex (9000 B.C.-8000 B.C.), the Firstview Complex (8000 B.C.-7500 B.C.), the Hell Gap Complex (8000 B.C.-7600 B.C.), Meserve/Dalton Complex (8000 B.C.-7000 B.C.), the Alberta Complex (7500 B.C.-7000 B.C.), the Cody Complex (6800 B.C.-6400 B.C.), and the Fredrick Complex (6400 B.C.-6000 B.C.) (Brown and Brown 1987). Complete discussions of the Paleo-Indian complexes in the Central Plains are presented in Brown and Brown (1987) and O'Brien (1984).

In northeastern Kansas most of the documented finds have been isolated projectile points. The few Paleo-Indian points that have been recovered have been found on the surface of gravel bars and terraces of creek beds and river channels (Brown and Logan 1987; Logan 1987b:35; Rogers and Martin 1982, 1983; Schmits 1980; Witty 1964). The occurrence of these items in stream channels suggests that many of the artifacts originated in deeply buried deposits scoured by seasonal flooding and erosion. Confirmation of such deeply buried deposits was encountered at the Coffey site along the Big Blue River, where Schmits (1980:84) concluded that the late Paleo-Indian and Early Archaic materials recovered from the T-1 terrace indicated a stable surface throughout the Holocene. Elsewhere in the area, the presence of mammoth, camel, and bison remains in the alluvium of the Kansas River basin suggests the presence of a spruce-montane conifer parkland in or near the region about the time that Paleo-Indians were present (Brown and Simmons 1984; Logan 1987b:11; Martin et al. 1979). However, no clear associations between Pleistocene megafauna and Paleo-Indian materials have been identified in the area.

Archaic (6000 B.C.-A.D. 1)

Like the Paleo-Indian remains, Archaic expressions in northeastern Kansas are very limited. P. R. Katz (1971, 1973) reported deeply buried deposits from the Sutter site along Muddy Creek in Jackson County. Found beneath 30 feet of alluvium, the recovered assemblage includes lanceolate and square-stemmed projectile points and other implements reminiscent of the Fredrick and McKean complexes of the High Plains (Katz 1971). The Archaic deposits at Sutter were radiocarbon dated between 6000 and 5500 B.C. (Katz 1973). Contemporaneous cultural deposits were recovered over 7 m below the surface on the T-1 terrace fill of the East Fork of the Little Blue River near Kansas City (Kopsick 1982; Schmits and Bailey 1986). Clearly, the deep burial of cultural deposits by alluviation and other forces has concealed important elements of the archeological record for all cultural periods from the area. This problem is also recognized in other regions (Mikkleson n.d., 1992; Onken 1992; Stewart 1990). Other Archaic deposits from eastern Kansas include side-notched points, knives, choppers, and grinding stones in association with deer, bison, small mammals, walnuts, and chenopods characterizing the Chelsea phase (2700 B.C.-2000 B.C.) at the El Dorado Reservoir (Grosser 1977; Leaf 1979).

Though not clearly identified in Johnson County, the Nebo Hill phase (2000 B.C.-1000 B.C.) may be the most common Archaic phase represented in northeastern Kansas and northwestern Missouri. The Nebo Hill phase was first recognized by Shippee (1948) and has since been more formally discussed by Reid (1980, 1983) and others. Reid (1983:23) proposed that the Nebo Hill settlement pattern may include large upland (late summer/fall) habitation sites, smaller tributary terrace (late fall/winter) camps, chert quarry sites, biface caches, and mortuary sites. Nebo Hill subsistence was based on hunting-gathering and may have been supplemented with early cultigens as indicated by three-quarter-groove axe tree-felling tools, hoe bits or "Sedalia Diggers," and site locational regularities (Reid 1983:34). Nebo Hill components may also contain some of the first fiber-tempered ceramics produced in northeastern Kansas. The Nebo Hill projectile point type is a distinctive lanceolate with thick, lenticular to diamond-shaped cross sections (Reid 1980:60-61).

The Hillsdale Lake Project in Miami County (Blakeslee and Rohn 1986) recovered Nebo Hill components from two dated sites: site 14MM1C (between 2020 B.C. and 1885 B.C.) and site 14MM27 (2000 B.C. and

1550 B.C.). Several other Nebo Hill sites were also examined but provided no datable materials. Again, the Nebo Hill settlement pattern was expressed by large summer villages with dense cultural deposits found on upland ridges and smaller winter habitations with noticeably smaller artifact concentrations on low protected terraces (Blakeslee and Rohn 1986:1276-1277). Both site types may contain remnants of former dwellings.

Another cultural period is also represented in northeastern Kansas during the first millennium B.C., though it has not been clearly defined as to how it is distinguished from or related to the Nebo Hill Complex. Logan (1990) reported an Early Woodland component dating to 400 B.C. at site 14JO46 in Johnson County, along Cedar Creek.

Ceramic Period (A.D. 1-1800)

In *Archeology in Kansas*, O'Brien (1984:45) indicates that two basic lifeways are represented in Kansas during the Early Ceramic period that correspond roughly with the first millennium after Christ. The Kansas City Hopewell Variant (A.D. 1-750) is well represented in the eastern third of the State, and the Plains Woodland is represented to the west. The Kansas City Hopewell Variant appears to center around the confluence of the Kansas and Missouri rivers and may be directly related to the migration of Illinois Hopewellian peoples to the Missouri and Kansas River valleys. The settlement pattern consisted of large permanent villages based at stream confluences with these major rivers and related small hunting, gathering, and processing camps along the secondary drainages. No dwellings have been examined for the period in northeastern Kansas, thus the architectural styles and village configurations are unknown. Subsistence was based on hunting, gathering, fishing, and some cultivation of maize, marsh elder, and squash. Villages include dwellings; large, often trash-filled storage pits; and concentrated midden deposits indicative of permanent settlement. Mortuary/ceremonial mounds of the variant were typically situated on prominent bluff tops and contained large square or rectangular stone vaults measuring 16 to 26 m in diameter (Brown and Simmons 1984; Wedel 1943).

Distinctive Hopewellian assemblages include large sack-shaped ceramic jars with subconical bases and sand, grit, sherd, or mixed temper (Katz 1974). Decoration includes plain exterior surfaces and decorated rims and shoulders. Lithic elements include corner-notched and contracting-stem projectile point types, blocky end scrapers, drills, gouges, chipped stone and ground stone celts and axes, and bladelets. Imported platform pipes, copper celts, shell, and obsidian indicate long-distance trade relationships were ongoing throughout the period. The copper originated in the Lake Superior vicinity, and the obsidian reportedly originated in Yellowstone National Park in northwestern Wyoming. The phenomenon of trade during this phase implies that northeastern Kansas aborigines were participating in the Hopewell Interaction Sphere of the eastern woodlands (O'Brien 1994:203).

In contrast to the Hopewellian patterns, Adair (1988:35) and others have suggested that the Plains Woodland period (A.D. 400-900) (O'Brien 1984:50) represents several discrete, localized phases throughout Kansas. Examples from northeastern Kansas include the Grasshopper Falls phase in the Delaware River vicinity, the Hertha phase along Hillsdale Lake and Bull Creek, and the Wakarusa and Deer Creek phases along the Wakarusa River and Clinton Reservoir. Where the Hopewellian Variant probably represents immigrant populations to the area, the Plains Woodland phases are generally considered to represent cultural expressions of indigenous populations.

The Plains Woodland Grasshopper Falls, Hertha, Greenwood, Butler, and Keith components reflect a semisedentary lifestyle with large (multiple family) villages and at least part-time residence in small, isolated, nuclear family-size houses. Grasshopper Falls dwellings were oval, grass-and-daub structures ranging in size from 115 to 853 square feet (Reynolds 1981:85). Settlements include two to 12 structures per site (Adair 1988:32). Features include storage pits that occur within and near dwellings and occasional

hearths in open yard areas. Grasshopper Falls (and other Plains Woodland) components do not contain pronounced midden deposits resulting from permanent, long-term, or repeated settlement. The Grasshopper Falls subsistence base appears to have been more dependent on hunting and gathering than cultivation. Ceramics consist of simple utilitarian pottery without notable decoration represented by medium- to large-sized conical based pots with angular grit particle temper. Vessel surfaces are either cord-roughened, smoothed-over cord-roughened, smoothed, or brushed. Lithic items include medium to large stemmed dart points and smaller side-notched and corner-notched projectile points, drills, gouges, thin bifaces, end scrapers, hafted scrapers, and side scrapers. Ground stone includes celts, mullers, grinding slabs, and abraders (Reynolds 1987:28). The Grasshopper phase represents the most common prehistoric component found at the Grove Reservoir in Shawnee and Jackson counties (Reynolds 1987:184) and at Perry Lake in Jefferson County (Witty 1983:215).

The Hertha phase (A.D. 365-760) has been recognized from investigations of Bull Creek and Hillsdale Lake in Johnson and Miami counties (Blakeslee and Rohn 1986; Brown and Simmons 1984). Based on a hunting-and-gathering economy, the Hertha settlements appear to be smaller and more ephemeral than those of the Kansas City Hopewell Variant, Cuesta phase settlements (southeastern Kansas), or Greenwood phase sites (central Flint Hills/western Osage Cuestas region) (Blakeslee and Rohn 1986:1272). Excavated Hertha winter structures are oval in plan with central rock-lined hearths. The Hertha tool kit is characterized by small to medium corner-notched points, scrapers, few ground stone tools, and cord-roughened globular-shaped ceramic vessels with assorted tempers (grog, crushed granite, sand, crushed and burned bone, flat cell, and untempered) usually without decoration. The variety of tempers and an absence of conchoidal vessel forms may help distinguish Hertha phase components. The near absence of horticultural-related elements also suggests winter use of the Hillsdale Lake area.

The Wakarusa (A.D. 1-1000) and Deer Creek (A.D. 1-750) phases are represented along the Wakarusa River and the Clinton Lake area (Johnson 1968). The Wakarusa phase was recognized at the Kampschroeder site (14DO27) situated on a terrace in the Rock Creek valley in Douglas County. Houses were built without pits leaving little architectural evidence beyond interior storage pits and residual wattle-and-daub (Brown and Simmons 1984:XIII-22). Settlements include isolated dwellings situated on a small rise above the first stream terrace. Ceramics are grit-tempered and cord-roughened, and projectile points tend to be large stemmed and corner-notched types (atlatl or throwing-stick related).

Deer Creek phase components were first recognized at the Anderson site (14DO32) in the Wakarusa River valley (Johnson 1968:132-33). Deer Creek settlements occur on terraces along small streams, although no architectural features or burials have been identified. Pottery shows grit temper with plain exterior surfaces. Like the Wakarusa phase, the stone tool assemblage includes large stemmed and corner-notched types and smaller corner-notched types believed to be related to the introduction of the bow and arrow.

The Middle Ceramic/Plains Village period (A.D. 1000-1500) settlements show increasing dependence on cultigens and more permanent settlement than was supported by hunting/gathering/fishing subsistence. Principal among the plants grown were corn, beans, squash, and sunflowers. Cultural complexes of northeastern Kansas during the period include the Steed-Kisker phase near Kansas City, the Nebraska phase in northeastern Kansas/eastern Nebraska/southwestern Iowa, the Pomona Variant of eastern Kansas, and others such as the Smoky Hill and the Upper Republican phases to the west and south of the present study area.

Steed-Kisker phase (A.D. 1000-1250) materials reflect "a productive agricultural economy in which corn, beans, squash and domestic sunflower were raised" O'Brien (1984:57). This subsistence base was supplemented with hunting and gathering. Adair (1988) mentions that the Steed-Kisker phase showed the exclusive production of Northern Flint corn among the local complexes. Adair (1988:93) described Northern Flint corn:

> as a distinctive but variable and rather late type of corn and is most common in prehistoric times in New England, Upper Missouri, and Middle Mississippi area sites... The presence of Northern Flint in only Steed-Kisker sites suggests that this cultural complex maintained some relationship with populations to the east where the variety may have actually developed [Adair 1988:93, after Yarnell 1964].

The Steed-Kisker settlement typically includes farmsteads or hamlets comprised of one, two, or three rectangular, or subrectangular, shallow pit-house structures with or without an extended entryway (Brown and Simmons 1984:XIV-33). The hamlets appear to have typically been occupied by a single family. Interior cache pits and nearby storage features consisting of bell-shaped, subterranean granaries were located near the corn fields. Sedentism is expressed by trash-filled storage facilities and some occasionally extensive cemeteries represented by mounds typically placed behind the farmstead or hamlet (Logan 1987a:15).

The Steed-Kisker phase assemblages are characterized by shell-tempered bowls and jars with plain surfaces, incised lines and scroll designs, and lug or loop handles suggesting some similarities with Middle Mississippian cultures of eastern Missouri and western Illinois (Logan 1987a:15). Clay pipes, animal and human effigies, small triangular, side-notched and side-and-basal-notched arrow points, small end scrapers, alternately beveled knives, ground stone celts and axes, sandstone shaft abraders, ground stone pipes, and worked hematite are also represented (Logan 1987b:41).

The Nebraska phase (A.D. 1050-1425), related to the Central Plains tradition, shares some traits with the Steed-Kisker phase with respect to settlement-subsistence pattern. Concentrated along the Missouri River and its tributaries within a portion of the glaciated region of northeastern Kansas, the Nebraska phase extended north along the Missouri to eastern Nebraska, western Iowa, and northwestern Missouri (Brown and Simmons 1984:XIV-44). Settlements may range from one to 30 earth lodges including:

> (1) Villages that consist of more than ten dwellings that are not compact nor fortified; (2) hamlets that consist of two to ten dwellings that may be grouped into "neighborhoods" consisting of several hamlets and isolated houses; and (3) homesteads that consist of isolated dwellings not clearly associated with any other dwelling. Sites are usually situated on high bluffs or terraces overlooking adjacent river valleys [Brown and Simmons 1984:XIV-45].

Among the ceramic hallmarks of the Nebraska phase are collared rims, collared rims with an internal channel, and unthickened forms. Other vessels include straight-walled and incurvate bowls and short-necked bottles similar to Mississippian complexes. Characteristic lithic items include small triangular, side-notched projectile points and larger unnotched triangular forms (Brown and Simmons 1984:XIV-45).

The Pomona Variant or complex (A.D. 900-1430) (Brown 1984) of eastern Kansas is recognized as a "late survival of Plains Woodland manifestations with shared traits from contemporary Central Plain complexes" (Adair 1988:36, after Witty 1978). Settlements are represented by isolated dwellings or groups of two or three houses associated with low-lying terraces and sheltered floodplain settings along streams and rivers. Bluff top settings were also utilized. Structural construction elements include an oval plan with interior cache pits and light pole frames with wattle and daub. In contrast to the Central Plains tradition, there were no large agglomerated settlements resembling villages or earth lodge structures.

In northeastern Kansas, the Pomona Variant includes the Clinton, May Brook, and Apple Valley phases. The Clinton phase (A.D. 960-1430) is found in the Verdigris, Neosho, Marais des Cygnes, Wakarusa, and Little Blue (Missouri) valleys (Adair 1988:36). The Apple Valley phase (A.D. 1300-1350) is encountered along the Delaware, Verdigris, and Neosho watersheds (Adair 1988:37). The May Brook phase (A.D. 1100-1290) is identified along the Little Blue River in eastern Missouri, and the Wakarusa, Neosho, Marais

des Cygnes, Bull Creek, and Verdigris watersheds (Brown 1984). Comprised of eight diagnostic traits, the Pomona Variant has been described as:

> The formal dimensions of the variant include: (1) bifacially modified, small triangular arrow points; (2) bifacially modified knives; (3) marginally modified end scrapers; (4) marginally modified side scrapers; (5) marginally modified disto-lateral scrapers; (6) three varieties of scrapers that include: (a) flat smoothing stones; (b) grooved stones; and (c) incised or sharpening stones; (7) shallow, basin-shaped, or sometimes bell-shaped, storage pits; (8) large daub concentrations associated with post molds that form oval patterns; (9) three ceramic wares that include (a) Pomona plain rims and lips; (b) Pomona decorated rims and lips (excluding knobbing); and (c) Pomona knobbed rims and lips [Brown and Simmons 1984:34, after Brown 1984:441].

Additional characteristic elements are detailed in Brown (1984) and Brown and Simmons (1984:34). In brief, these include the use of local cherts for arrow points, nondecorated lips on ceramic vessels, and others.

At Hillsdale Lake, the Pomona Variant was present between A.D. 1000-1300 (Blakeslee and Rohn 1986:1272). All of the Pomona sites examined by the reservoir project were plow zone sites mixed with earlier components and no definitive patterns were discernable along Bull Creek. At Clinton Lake, two Pomona phases were identified for the Wakarusa drainage. The Clinton phase (A.D. 950-1420) is marked by oval dwellings with occasional interior cache pits, exterior hearths, arrow points of nonlocal chert production, and ceramics with undecorated lips (Logan 1987b:43). The Maybrook phase (A.D. 1140-1290) was recognized by arrow points of nonlocal cherts and ceramics with shell temper and decorated lips. A crematorium containing burned remains of two adult males was also identified for the period at site 14SH101.

In *Archaeological Investigations in the Plains Village Frontier; Northeastern Kansas*, Logan (1990:24), indicates that the core areas of the Apple Valley, the May Brook, and the Clinton phases overlap in a large area that includes the vicinity of Johnson County and SFAAP. Logan (1990) argues that this overlapping area represents the common territory of the Steed-Kisker, Pomona, and Nebraska peoples as expressed by intrasite association of ceramic wares, house forms, and the configurations of storage pits, hearths, and dwellings. The Plains Village Frontier investigation conducted for the Kansas State Historical Society investigation on two areas, one at the Lone Star vicinity of Washington Creek in Douglas County (five sites studied) and the other along Cedar Creek Community Development in Johnson County (30 sites studied). Additional site data were considered from previous excavations at the Keen site (14JF303) on Walnut Creek (Delaware River watershed) in Jefferson County and the Zacharias site (14LV380) along Salt Creek (Delaware River watershed) in Leavenworth County. The study found that previous surface disturbance (plowing) had compromised the integrity of the Washington Creek study area and it was not possible to reconstruct the relationships between the ceramic age components. However, the investigation was more successful at the Cedar Creek Community Development:

> We have been able to determine, at least tentatively, the cultural or temporal affiliations of all but five prehistoric sites in the Cedar Creek project area. Sixteen components are assigned to the Woodland period, fourteen of which date to the Plains (Late) Woodland period. One component of the Early Woodland period has been identified and another could only be assigned a general Woodland affiliation. There are nineteen components of the Plains Village period within the Cedar Creek Community area. The similar size of these components, the comparable composition of their respective artifact assemblages, and the fact that six sites contain components of both periods suggests there was no significant change in settlement pattern or site function throughout the ceramic period [Logan 1990:136-7].

Four sites (14JO21, 14JO46, 14JO511, and 14JO521) were selected for test excavations at Cedar Creek based on the presence of Plains Village components. Of the four, only site 14JO46 had sufficient depth and physical integrity to provide useful data. This site had also been examined during previous work conducted by Iowa State University. Basing his findings on the combined studies of the site, Logan (1990) concluded that site 14JO46 provided support for the interaction of Plains Village (Nebraskan phase) populations in the Frontier based on McVey ware ceramics and an interior hearth. These combined attributes:

> suggest that the (Nebraska) group was either more closely related to the "indigenous" population than was heretofore believed or, at the least, suggests that (Nebraska) group felt sufficiently secure in their interaction with the latter (Pomona) to settle so far from home [Logan 1990:139].

Logan's (1990) evaluation of nearby site 14JO21-A considered, in contrast to site 14JO46 and other Cedar Creek sites, this site representative of a classic Pomona core-area site.

> Two calibrated radiocarbon dates (from 14JO21-A) with a calibrated average of A.D. 1435 (one sigma range = 1420-1445) indicate the Pomona group occupied the site more than 100 years after the disappearance of the Steed-Kisker phase and at least two generations (40-50 years) following the end of the Nebraska phase. Not only did the Pomona folk in northeastern Kansas survive all other Plains Village cultures in the Kansas City locality, so did their cultural heritage (from an archaeological point of view). Gone is any trace of influence from the Central Plains Tradition or Mississippian populations with respect to ceramic technology (with the exception of the use of shell temper) and house form as well. This has important implications for understanding frontier behavior based on archaeological data. It suggests an indigenous group was open to contact and information exchange with different populations for a period of 500 years (from the Nebraska occupation of 14JO46 to A.D. 1400) yet maintained its cultural integrity through and beyond that period. It points to a significant degree of cultural conservatism [Logan 1990:140].

The Late Ceramic/Protohistoric period in northeastern Kansas was a period of some significant changes in aboriginal lifeways. Among the changes were an unknown variety of migrations of aboriginal peoples and the development of larger and fewer villages complete with large, circular earth lodges. From about A.D. 1200 to 1800, the Oneota tradition extended along the eastern edge of the Great Plains and throughout the Prairie Peninsula. The Oneota lifeways are distinguished from earlier settlements by a variety of important elements. Large villages consisted of as many as 150 lodges of two varieties. The classic earth lodge was circular, measuring about 30 feet in diameter, with a central hearth and an earthen covering supported by four central posts. The bark-covered dwellings were rectangular, measuring about 25 by 60 feet, with two or three hearths. Interior storage pits were bell-shaped and were common in both dwelling types. Subsistence included the cultivation of maize, beans, and squash, and semi-annual bison hunts supplemented by hunting and gathering (Brown and Simmons 1984). Pottery included simple stamped, incised, and plain but no cord-roughened wares (Wedel 1961).

> In terms of material abundance, the early historic period between perhaps 1500 and 1700 in the Southern and Central Plains, and between 1600 and 1750 on the Middle Missouri, probably represented the high tide of the Village Indians in the Eastern Plains. The greater stability of residence and the marked concentration of tribal populations in a smaller number of larger towns undoubtedly sparked a notable flowering of culture and a richer and more abundant life by comparison with the earlier days. One wonders whether the great intervillage and tribal rituals and institutions for which such people as the Pawnees, for example, were so widely known in later days, and the numerous societies which formed such an important part of their community life had their real development and growth in this period [Wedel 1961:286-7].

The Oneota expressions that have been recognized in Kansas, though limited, have been encountered in Doniphan, Pottawatomie, and Coffet counties (Brown and Simmons 1984:XIV). Based on the similarities

of Oneota sites to those described by French, Spanish, and later descriptions, the Oneota have been considered ancestral to the historic Kansa encountered by the early Europeans in the study area (Brown and Simmons 1984:XIV). Other more recent groups including the Iowa and Missouri also appear to have been carriers of Oneota culture (Wedel 1961:288), as well as the Ottoe and Winnebago, together representing the Chiwere group of Siouan speakers (Schlesier 1994:308).

The Protohistoric period represents the phase of aboriginal life immediately prior to contact with Europeans (at which point the historic period began with the writings of explorers, trappers, and military agents). Though Europeans had hardly ventured into northeastern Kansas before the seventeenth century, some of the influences of European emigration to the Americas were experienced prior to physical contact. Principal among these were infectious diseases, the migrations of Native American populations from other areas, and the introduction of the horse, followed shortly thereafter by participation in the fur trade and European commerce and the acquisition of firearms during the early historic frontier period.

When the ancestors of the northeastern Kansas aboriginal populations arrived in the Americas over 10,000 years ago, they were vastly separated from the Eurasian populations from whence they originated. With New World population densities below thresholds required to provide host populations for certain diseases such as cholera and without domesticated animals that share many diseases with humans (e.g., swine, cattle, horses), the number of pathogens and appropriate antibodies among Native Americans were few compared to those carried by the arriving Europeans. Details of the effects of infectious diseases on northeastern Kansas aboriginal populations are not known. However, reports from other regions of the New World suggest that European contagions were devastating.

Schlesier (1994:xviii) and others have argued that the Americas reached their highest population levels during the early sixteenth century. With the arrival of Panfilo de Narvez's fleet on the Mexican Coast in 1514, Cortez's army carried smallpox to the Mexican populations that spread rapidly. Dobyns (1983) estimated that the first smallpox epidemic killed about 75 percent of the inhabitants wherever it reached. Similarly, Snow and Lanphear (1988:28) and others have argued that similar epidemics in New England in 1616-1619 and 1633-1639 claimed approximately 86 percent of the local aboriginal populations (Cronon 1983:85-91; Schlesier 1994:xvii). In fact, from 1600-1675 it has been estimated that the total number of Indians of New England fell from over 70,000 to fewer than 12,000, and New Hampshire and Vermont were virtually depopulated altogether (Cronon 1983:89). Though these estimates may be disputed, the variety of contagions that entered the Americas included measles, forms of plague, influenza, diphtheria, scarlet fever, typhus, malaria, syphilis, cholera, and others that had circulated in Europe for many generations.

Besides the obvious loss of life caused by the contagions, the effects were devastating to the social fabric of Native American communities. Cronon (1983) points out that epidemics caused populations to miss important phases of their annual subsistence cycles and were thereby weakened further when the next infection arrived. Political and spiritual leaders also fell victim and, when combined with large numbers of casualties, some communities were no longer viable entities and were required to join new villages to form new political relations. Likewise, the pathogens undermined the very spiritual and religious foundation of village life. Faced with the diseases, old medicine practices were often useless against the biological assault. In many cases, the only choice to avoid the disease was to flee an area altogether thus causing the abandonment of various areas and migration to new locations.

Native American migrations and their causes were innumerable throughout the protohistoric and early historic periods in North America. For example the Kansa, Osage, and Pawnee who occupied much of northeastern Kansas by the nineteenth century originated elsewhere. The Kansa may have moved up the Missouri River and entered the area by 1724 (O'Brien 1994:222). Kansa legends spoke of a western migration originating somewhere east of the Mississippi River (possibly the lower Wabash valley) sometime prior to 1673 (Unrau 1971:12-15). The Osage may have moved into the region from the lower Ohio River

by 1775 (Wilson 1988:13). The Pawnee may have moved from the Red River region to Kansas after 1650 (Hyde 1974:12). The Shawnee who were moved to northeastern Kansas by the government during the early 1800s, had spent over a century moving throughout the Mid-Atlantic and Piedmont regions (Kent 1989; Mayer-Oakes 1955; Wallace 1981).

Another influence of social and cultural change as a result of European contact was the introduction of the horse. According to Beck and Haase (1989:9), the dispersion of the horse throughout the west took place from the time the Spanish first encountered the Navajo in 1659 near Santa Fe, until 1770 when the Sioux obtained the animals along the Canadian border:

> Before the arrival of the horse, a camp could seldom move more than six miles a day. The weight of goods that was carried was limited, as only women and dogs were available as porters; men had to carry weapons and be on the alert for attack. A horse-borne camp could move thirty miles in a day. With horses available, the tepee grew in size and the amount of personal property likewise increased [Beck and Haase 1989:9].

The effect of the horse on cultures of the Plains was a debated topic in anthropology from the 1930s into the 1950s (Ewers 1955; Kroeber 1939; Wissler n.d.). Wissler (n.d.) argued that the classic traits of Plains culture (e.g., the tepee, travois, foot war party, the coup, Sun Dance, camp circle, men's societies, and circumscribed range of camps) originated before the horse. Kroeber argued that the sixteenth-century Plains Indians:

> "would have been miserably poor and almost chronically hungry... Showy clothing, embroidered foot gear, medicine bundle purchases, elaborate rituals, gratuitous and time consuming warfare, all these he could have indulged in but little . . ." [Kroeber 1939:76-77].

Ewers stated his position as:

> . . . I cannot believe that Plains Indian life in the Horse Culture Period, which included such elements as the daily care, breeding and training of horses, the teaching of children to ride, the chase, specialized riding and transport gear adapted to the use of horses, new methods of packing and transporting equipment, frequent horse raiding and mobile scalp raiding, extensive trade in horses, social status based upon property ownership, important role of the horse in children's play, horse racing, and the horse medicine cult, did not differ qualitatively, as well as quantitatively from Plains Indian life in the Pedestrian Culture Period. The use of horses not only enriched the habits of daily life, served to develop new manual and motor skills, changed their concepts of their physical environment and the social relationships of individuals [Ewers 1955:502].

As a result of more recent archeological research, it is clear that some cultural aspects of the Central Plains had their antecedents in earlier times. It is also true that with the advent of equestrian society and the introduction of firearms, aboriginal lifeways were changed considerably. Additional details of the protohistoric and early historic periods are presented in Hyde (1974), Schlesier (1994), Secoy (1992), and Unrau (1971).

THE ETHNOGRAPHIC RECORD: NATIVE AMERICANS OF THE PLANT VICINITY

When Francisco Casques de Coronado entered Central Kansas in 1541, the Native American groups that occupied the area included the Wichita, Kansa, Pawnee and the Plains Apache (Lees 1989:69). Of these, the Kansa lived the closest to SFAAP along the Missouri and Kansas rivers in northeastern Kansas. In 1800 they moved to Manhattan along the Kansas River until 1830. The Kansa were speakers of the Siouan language family (Lowie 1963:487), specifically Dhegia Sioux (Unrau 1971). The Kansa were divided into

two moieties: the Uata (Keepers of the Pipe) and Ictunga (the Wind People) that emerged from earlier groups. The moieties were again divided into several exogamous clans that were comprised of various families. The Kansa typically practiced patrilineal descent where kinship followed the male side and patrilocal residence with the husband's clan following the marriage.

Sharing some cultural components with the regional prehistoric Oneota Aspect, the Kansa also appear to have been relative newcomers to the State along with the Osage, Ponca, Quapaw, and Omaha (Lees 1989:69; Unrau 1971). Kansa settlements were characterized by relatively large villages with circular earth lodges and elongate bark-covered dwellings. With a mixed subsistence economy based on agriculture and hunting and gathering, the Kansa depended on corn, beans, squash, localized hunting and foraging, and semi-annual bison hunts (Lees 1989:69; Unrau 1971). The acquisition of the horse by 1800 may have influenced more frequent bison-hunting expeditions to the Arkansas River vicinity. Population statistics for the Kansa taken by the French in 1702 indicated 1,500 individuals, and 1,565 individuals (465 warriors, 500 women, 600 children) were reported by an explorer in 1806 (Unrau 1971:25). Archeological investigations of the Doniphan site and the Blue Earth Village (Wedel 1959) indicated that by 1800 the Kansa were dependent on items of industrial manufacture (Lees 1989:69). A history of the Kansa is available in Unrau (1971).

The Pawnee are Caddoan speakers and share historic origins with the Wichita. Comprised of four autonomous bands (Grand, Republican, Tappage, and Wolf/Skidi), the Pawnee practiced matrilocal residence with the bride's family (Brown and Simmons 1984:XVIII). The Pawnee shared several cultural traits with the Kansa and may share ties with the prehistoric Upper Republican and Smoky Hill phases of the Central Plains tradition. Important among these traits were large semisedentary villages with circular (semi-subterranean) earth lodges, the cultivation of corn, beans, and squash; and the use of large bell-shaped storage pits. Semi-annual bison hunts and hunting-and-gathering forays supplemented the subsistence base. Seasonal hunting, performed in winter months, required several moves throughout the winter to provide forage for their horses. Villages were occupied from March or early April until late fall. A history of the Pawnee is available in Hyde (1974) and another discussion of Pawnee cosmology, cultural ecology, history, and related subjects is presented in White (1982).

The Osage entered eastern Kansas from Missouri and the Mississippi River valley during the eighteenth century. Already participants in the fur trade with the French by the time of their arrival, some of the original Osage customs are difficult to reconstruct. The Osage are Dhegia Siouan speakers with patrilineal descent and practiced patrilocal residence rules according to the husband's clan. Divided into Sky People (with nine clans) and Earth People (15 clans), the Osage erected villages like other peoples of the eastern Plains; each village was divided with Sky People occupying one-half of the village and Earth People occupying the other half of the village.

During the early nineteenth century the United States initiated many treaties with the Indians. In 1825 the Kansa and Osage ceded all their claim to the lands on both sides of the Kansas River and in 1833 all claims south of the Nebraska River (Hale 1854:184). These and other treaties helped to move 10,000 eastern woodlands Indians into what would become Kansas.

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